CLAIMS

The following listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1. (Previously Presented) An optical code reading system comprising:

an extended light source emitting an extended-beam light for directly illuminating an optical code with an illuminating light, the extended light source including one of a backlight assembly and a frontlight assembly;

at least one image sensor for sensing the illuminating light reflected by the optical code and generating signals related to at least one image of the optical code; and

at least one processor for processing at least a portion of the signals, generating a decodable image corresponding to the signals and decoding at least a portion of the decodable image.

Claim 2. (Original) The optical code reading system as in Claim 1, further comprising at least one direct point light source for illuminating the optical code with narrow-beam light.

Claim 3. (Previously Presented) The optical code reading system as in Claim 2, wherein the at least one processor is further configured for selectively operating one of the extended light source and the at least one direct point light source.

Claim 4. (Original) The optical code reading system as in Claim 3, wherein the at least one processor is further configured for determining at least one optical property of the imaged optical code, and the extended light source and the at least one direct point light source are selectively operated in accordance with the determined at least one optical property.

Claim 5. (Original) The optical code reading system as in Claim 3, wherein the at least one processor alternately operates the extended light source and the at least one direct point light source for respective consecutive imaging captures of a series of imaging captures by the optical code system.

Claim 6. (Original) The optical code reading system as in Claim 1, wherein the at least one processor is further configured for determining the imaged optical code's code-type, wherein the code-type is selected from the group comprising: a UPC code-type, a DataMatrix code-type or a QR code-type.

Claim 7. (Original) The optical code reading system as in Claim 1, wherein at least a portion of the optical code reading system is configured and dimensioned to be included in a handheld device having a lens and an image sensor acting as a camera and one of a backlit and a frontlit display for displaying data and providing the extended light source.

Claim 8. (Original) The optical code reading system as in Claim 7, wherein the handheld device is one of a handheld computer device and a mobile phone.

Claim 9. (Original) The optical code reading system as in Claim 1, further comprising a display screen for displaying data, wherein the extended light source further provides illumination for the display of data on the display screen to a user.

Claim 10. (Original) The optical code reading system as in Claim 1, wherein the extended light source is a frontlight assembly, the optical code is positioned in front of the extended light source, and the at least one image sensor is positioned behind the extended light source.

Claim 11. (Original) The optical code reading system as in Claim 1, further comprising at least one direct point light source positioned behind the extended light source for illuminating the optical code with narrow-beam light.

Claim 12. (Original) The optical code reading system as in Claim 1, wherein the extended light source includes a plurality of LEDs and a lightpipe receiving light emitted by the plurality of LEDs and emitting the extended-beam light.

Claim 13. (Original) The optical code reading system as in Claim 12, wherein at least a portion of the plurality of LEDs are packaged together in at least one LED light bar.

Claim 14. (Original) The optical code reading system of Claim 1, further comprising an LCD positioned in front of or behind the extended light source.

Claim 15. (Previously Presented) A method for reading an optical code on a target surface comprising the steps of:

emitting with at least one of a backlight and frontlight assembly an extended-beam light towards the optical code for directly illuminating the optical code with an illuminating light;

sensing the illuminating light reflected from the optical code;

generating at least one image of the optical code corresponding to the sensed light; and

decoding at least a portion of the at least one image.

Claim 16. (Original) The method as in Claim 15, further comprising the step of determining at least one optical property of the imaged optical code.

Claim 17. (Original) The method as in Claim 15, wherein the optical code is a UPC code, a Data Matrix code or a QR code.

Claim 18. (Original) The method as in Claim 15, further comprising the step of emitting a narrow-beam light for illuminating the optical code.

Claim 19. (Original) The method as in Claim 18, further comprising the step of controlling the emission of the extended-beam light and the emission of the narrow-beam light for selectively emitting at least one of the extended-beam light and the narrow-beam light.

Claim 20 (Original) The method as in Claim 19, wherein the controlling step further includes alternating between emitting the extended-beam light and emitting the narrow-beam light for respective consecutive imaging captures of a series of imaging captures.

Claim 21. (Original) The method as in Claim 15, further comprising the step of clearing data displayed on a display screen coupled to the at least one of the backlight and frontlight assembly prior to illuminating the optical code.

Claim 22. (Previously Presented) A handheld processing device comprising:

an illuminated display disposed within a housing for displaying data, the illuminated display being configured to provide an extended-beam light for illuminating an optical code with an illuminating light;

a camera disposed within the housing for sensing the optical code illuminated by the illuminated display and generating corresponding signals; and

at least one processor configured for processing the signals.

Claim 23. (Original) The handheld processing device as in Claim 22, further comprising a light source providing narrow-beam illumination to the optical code.

Claim 24. (Original) The handheld processing device as in Claim 22, wherein the handheld processing device is a handheld computer device.

Claim 25. (Original) The handheld processing device as in Claim 22, wherein the handheld processing device is a mobile phone.

Claim 26. (Original) The handheld processing device as in Claim 22, wherein the illuminated display is an LCD screen illuminated by at least one of a backlight assembly and a frontlight assembly configured to display information relating to the imaged optical code.

Claim 27. (Original) The handheld processing device as in Claim 22, wherein the camera includes an auto-focus system for automatically focusing light reflected by the optical code onto the image sensor.

Claim 28. (Original) The handheld processing device as in Claim 22, wherein the optical code is selected from a group comprising: UPC, Data Matrix, and QR codes.

Claim 29. (Previously Presented) The handheld processing device as in Claim 22, wherein the at least one processor further controls illumination of the display and clearance of the display of data when dual-use illumination is used for illuminating the optical code.

Claim 30. (Original) The handheld processing device as in Claim 22, wherein the at least one processor further controls the light source.

Claim 31. (Previously Presented) A method for reading an optical code comprising the steps of:

providing for receiving an optical code read activation signal;

providing for clearing displayed data on a display screen in response to the activation signal; and

providing for controlling illumination of the display for providing illumination of the optical code with an extended-beam light.

Claim 32. (Original) The method as in Claim 31, further comprising the step of providing for controlling illumination of a direct point light source for illuminating the optical code with narrow-beam light.

Claim 33. (Original) The method as in Claim 32, further comprising the step of providing for determining at least one optical property associated with the optical code, wherein the controlling illumination of the display step and controlling illumination of the direct point light source is in accordance with the at least one optical property.

Claim 34. (Original) The method as in Claim 32, wherein the controlling illumination of the display step and controlling illumination of the direct point light source are performed for alternately illuminating the display and the direct point light source for respective consecutive imaging captures of a series of imaging captures.

Claim 35. (Previously Presented) A computer readable medium storing a set of computer readable instructions capable of being executed by at least one processor for reading an optical code, the readable instructions comprising:

means for providing for receiving an optical code read activation signal;

means for providing for clearing displayed data on a display screen in response to the activation signal; and

means for providing for controlling illumination of the display for providing illumination of the optical code with extended-beam light.

Claim 36. (Previously Presented) A computer data signal embodied in a transmission medium for execution by at least one processor for reading an optical code, the data signal comprising:

a code segment including instructions for providing for receiving an optical code read activation signal;

a code segment including instructions for providing for clearing displayed data on a display screen in response to the activation signal; and

a code segment including instructions for providing for controlling illumination of the display for providing illumination of the optical code with an extended-beam light.